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ABSTRACT

The 16 units of this book are designed as textbook supplements to encourage students to think mathematically and as mathematicians. Each unit begins with an orientation session which raises general concerns that always occur within mathematical exploration. This is followed by a short, original text in which a mathematician creates a particular field of mathematics or a new approach to the entire subject. Each unit opens for investigation the fundamental issues and premises that textbooks, by nature of their particular task, presuppose. The investigations can be approached as a group or individually. The work in these units precedes the textbook development of the topics and addresses questions such as how certainty is achieved about beliefs, what it means to understand something, and the nature of the relationships among the different kinds of things that can be known. The texts contain information on the nature and meaning of numbers, metaphors in mathematics, mathematical aptitude, thinking mathematically, unprovable points, infinity, and logical equivalence. (DDR)

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